Amendments to the Claims

Please amend claims 1, 3, 4, 5, 7, 8, 13, 15, 16, 19, 21 and 22 as indicated in the listing of claims.

Please cancel claims 6, 12 and 20 without prejudice or disclaimer.

Please add claims 42-60.

The listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A device comprising:

a micro-fluidic inlet channel to convey a process flow;

a plurality of micro-fluidic focusing channels to each convey one of a plurality of focusing flows, wherein the plurality of focusing channels include a first channel on a first side of the inlet channel, a second channel on a second side of the inlet channel, a third upper channel over the inlet channel, and a fourth lower channel under the inlet channel, the first and second focusing channels being planar with the inlet channel and the third and fourth focusing channels being non-planar with the inlet channel;

a focusing manifold coupled with the inlet channel at an inlet port, coupled with the first channel at a first focusing channel port on a first side of the inlet channel, coupled with the second channel at a second focusing channel port on a second side of the inlet channel, coupled with the third channel at a third upper focusing channel port over the inlet channel, and coupled with the fourth channel at a fourth lower focusing channel port under the inlet channel, the focusing manifold to focus the process flow by contacting four sides of the process flow with the plurality of focusing flows; and

a micro-fluidic outlet channel coupled with the focusing manifold at an outlet channel port to convey the focused process flow and focusing flows from the focusing manifold.

2. (Original) The device of claim 1:

wherein the first and the second focusing channels are angled relative to the inlet channel with sub-orthogonal angles;

wherein the third and the fourth focusing channels approach the focusing manifold from a same side thereof as the inlet channel;

wherein the third focusing channel is substantially vertically aligned over the inlet channel and the fourth focusing channel is substantially vertically aligned under the inlet channel;

wherein the focusing manifold comprises a shape of an upright cylinder;

wherein the focusing manifold comprises an upper spacing volume between an upper focusing channel port and the inlet port; and

wherein the void volume is in a range between 0.0005 mm^3 to 0.01 mm^3.

3. (Currently amended) The device of claim 1:

wherein the third upper focusing channel is on the first side of the ~~focusing~~ inlet channel, and the fourth lower focusing channel is on the second side of the ~~focusing~~ inlet channel; and

wherein the third upper focusing channel and the fourth lower focusing channel approach the focusing manifold from opposite sides thereof and are angled relative to the inlet channel with substantially equal angles.

4. (Currently amended) The device of claim 3:

wherein the plurality of focusing channels comprise an additional upper focusing channel over the inlet channel on the second side of the ~~focusing~~ inlet channel, and an additional lower focusing channel under the inlet channel on the first side of the ~~focusing~~ inlet channel; ~~and~~

wherein the additional upper focusing channel and the third upper focusing channel approach the focusing manifold from opposite sides thereof and are angled relative to the inlet channel with substantially equal angles; and

wherein the additional lower focusing channel and the fourth lower focusing channel approach the focusing manifold from opposite sides thereof and are angled relative to the inlet channel with substantially equal angles.

5. (Currently amended) A device comprising:

a micro-fluidic inlet channel to convey a process flow;

~~a plurality of~~ four micro-fluidic focusing channels to each convey one of a plurality of focusing flows, wherein the four micro-fluidic focusing channels comprise a first micro-fluidic focusing channel on a first side of the inlet channel, a second micro-fluidic focusing channel on a second side of the inlet channel, a third upper micro-fluidic focusing channel over the inlet channel, and a fourth lower micro-fluidic focusing channel under the inlet channel, the first and second focusing channels being planar with the inlet channel and the third and fourth focusing channels being non-planar with the inlet channel;

a focusing manifold coupled with the inlet channel at an inlet port and with the ~~plurality of~~ four focusing channels at a plurality of focusing channel ports to focus the process flow by contacting ~~at least three~~ four sides of the process flow with the plurality of focusing flows; and

a micro-fluidic outlet channel coupled with the focusing manifold at an outlet channel port to convey the combined focused process flow and focusing flow from the focusing manifold.

Claim 6. (Canceled)

7. (Currently amended) The device of claim ~~6:~~

~~wherein the four micro-fluidic focusing channels comprise a first micro-fluidic focusing channel on a first side of the inlet channel, a second micro-fluidic focusing channel on a second side of the inlet channel, a third upper micro-fluidic focusing channel over the inlet channel, and a fourth lower micro-fluidic focusing channel under the inlet channel; and~~

wherein the plurality of focusing channel ports comprise a first focusing channel port on a first side of the inlet channel, a second focusing channel port on a second side of the inlet channel, a third upper focusing channel port over the inlet channel, and a fourth lower focusing channel port under the inlet channel.

8. (Currently amended) The device of claim ~~7~~ 5, wherein the third and the fourth focusing channels approach the focusing manifold from a same side thereof as the inlet channel.

9. (Original) The device of claim 8, wherein the third focusing channel is substantially vertically aligned over the inlet channel and the fourth focusing channel is substantially vertically aligned under the inlet channel.

10. (Original) The device of claim 5, wherein the focusing manifold comprises a shape of an upright cylinder, and wherein the void volume is in a range between 0.005 mm^3 to 0.01 mm^3.

11. (Original) The device of claim 5, wherein the focusing manifold comprises an upper spacing volume between an upper focusing channel port and the inlet port.

12. (Canceled)

13. (Currently amended) The device of claim ~~12~~ 45, wherein the third upper focusing channel and the fourth upper focusing channel are on opposite sides of the focusing manifold and are angled at substantially equal angles relative to the inlet channel.

14. (Original) The device of claim 13, wherein the substantially equal angles comprise orthogonal angles.

15. (Currently amended) The device of claim ~~14~~ 45, wherein the third upper focusing channel is substantially vertically aligned over the fifth lower focusing channel and ~~a third~~ the fourth upper focusing channel ~~port~~ is substantially vertically aligned over ~~a fifth~~ the sixth lower focusing channel ~~port~~.

16. (Currently amended) The device of claim 5, wherein the ~~plurality of focusing channels include a first focusing channel on a first side of the inlet channel, a second focusing channel on a second side of the inlet channel, a~~ third upper focusing channel is over the inlet channel on the first side of the ~~focusing~~ inlet channel, and ~~a~~ the fourth lower focusing channel is under the inlet channel on the second side of the ~~focusing~~ inlet channel.

17. (Original) The device of claim 16, wherein the third upper focusing channel and the fourth lower focusing channel are on opposite sides of the focusing manifold and are angled at substantially equal angles relative to the inlet channel.

18. (Original) The device of claim 17, wherein the substantially equal angles comprise orthogonal angles.

19. (Currently amended) A device comprising:

a micro-fluidic inlet channel to convey a process flow;

at least ~~three~~ four micro-fluidic focusing channels to each convey one of a plurality of focusing flows, wherein the at least four micro-fluidic focusing channels include first and second focusing channels coplanar with the inlet channel, and third and fourth focusing channels not coplanar with the inlet channel;

a focusing manifold coupled with the inlet channel at an inlet port, coupled with the at least ~~three~~ four micro-fluidic focusing channels at a plurality of focusing channel ports; and

a micro-fluidic outlet channel coupled with the focusing manifold at an outlet channel port to convey the focused process flow and focusing flows from the focusing manifold.

20. (Canceled)

21. (Currently amended) The device of claim 19, wherein the ~~at least three~~ third micro-fluidic focusing ~~channels include a~~ channel is over the micro-fluidic inlet channel.

22. (Currently amended) The device of claim 19, wherein the ~~at least three~~ fourth micro-fluidic focusing ~~channels include a~~ channel is under the micro-fluidic inlet channel.

Claims 23-41. (Canceled)

42. (New) The device of claim 5, wherein the focusing manifold comprises a lower spacing volume between a lower focusing channel port and the inlet port.

43. (New) The device of claim 5, wherein the first focusing channel and the second focusing channel are angled at substantially equal angles relative to the inlet channel.

44. (New) The device of claim 43, wherein the angle is between 5 degrees and 90 degrees.

45. (New) A device comprising:

a micro-fluidic inlet channel to convey a process flow;

six micro-fluidic focusing channels to each convey one of a plurality of focusing flows, wherein the six micro-fluidic focusing channels comprise a first focusing channel on a first side of the inlet channel, a second focusing channel on a second side of the inlet channel, the first and second focusing channels being planar with the inlet channel, a third upper focusing channel over the inlet channel on the first side, a fourth upper focusing channel over the inlet channel on the second side, a fifth lower focusing channel under the inlet channel on the first side, and a sixth lower focusing channel under the inlet channel on the second side;

a focusing manifold coupled with the inlet channel at an inlet port and with the six focusing channels at a plurality of focusing channel ports to focus the process flow by contacting at least four sides of the process flow with the plurality of focusing flows; and

a micro-fluidic outlet channel coupled with the focusing manifold at an outlet channel port to convey the combined focused process flow and focusing flow from the focusing manifold.

46. (New) The device of claim 45, wherein the third upper focusing channel and the fourth upper focusing channel are on opposite sides of the focusing manifold and are angled at substantially equal angles relative to the inlet channel.

47. (New) The device of claim 43, wherein the fifth lower focusing channel and the sixth lower focusing channel are on opposite sides of the focusing manifold and are angled at substantially equal angles relative to the inlet channel.

48. (New) The device of claim 45, wherein the focusing manifold comprises a shape of an upright cylinder, and wherein the void volume is in a range between 0.005 mm^3 to 0.01 mm^3.

49. (New) The device of claim 45, wherein the focusing manifold comprises an upper spacing volume between an upper focusing channel port and the inlet port.

50. (New) The device of claim 45, wherein the focusing manifold comprises a lower spacing volume between a lower focusing channel port and the inlet port.

51. (New) The device of claim 45 wherein the plurality of focusing channel ports comprise a first focusing channel port on a first side of the inlet channel, a second focusing channel port on a second side of the inlet channel, a third upper focusing channel port over the inlet channel on the first side, a fourth upper focusing channel port over the inlet channel on the second side, a fifth lower focusing channel port under the inlet channel on the first side, and a sixth lower focusing channel port under the inlet channel on the second side.

52. (New) The device of claim 45 wherein the a micro-fluidic outlet channel is on an opposite side of the focusing manifold as the inlet channel.

53. (New) The device of claim 45, wherein the first focusing channel and the second focusing channel are angled at substantially equal angles relative to the inlet channel.

54. (New) The device of claim 53, wherein the angle is between 5 degrees and 90 degrees.

55. (New) The device of claim 19, wherein the plurality of focusing channel ports comprise a first focusing channel port on a first side of the inlet channel, a second focusing channel port on a second side of the inlet channel, a third upper focusing channel port over the inlet channel, and a fourth lower focusing channel port under the inlet channel.

56. (New) The device of claim 19, wherein the first focusing channel is on a first side of the inlet channel, the second focusing is on a second side of the inlet channel, the third focusing channel is over the inlet channel on the first side and the fourth upper focusing channel over the inlet channel on the second side.

57. (Original) The device of claim 56, wherein the third focusing channel and the fourth focusing channel are on opposite sides of the focusing manifold and are angled at substantially equal angles relative to the inlet channel.

58. (New) The device of claim 19, further comprising fifth and sixth focusing channels not coplanar with the inlet channel, wherein the third and fourth focusing channels are above the inlet channel and the fifth and sixth focusing channels are below the inlet channel.

59. (New) The device of claim 58, wherein the third upper focusing channel and the fourth upper focusing channel are on opposite sides of the focusing manifold and are angled at substantially equal angles relative to the inlet channel.

60. (New) The device of claim 58, wherein the third upper focusing channel is substantially vertically aligned over the fifth lower focusing channel and the fourth upper focusing channel is substantially vertically aligned over the sixth lower focusing channel.